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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATDOCTC@fr.com

Office Action Summary

Application No.

10/821,927

Applicant(s)

MARUYAMA ET AL.

Examiner

JAMIE NIESZ

Art Unit

2822

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 April 2008.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 49, 51-54, 56-59, 61-64, 66-79, 81-84 and 86-170 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 49, 51-54, 56-59, 61-64, 66-79, 81-84 and 86-170 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 12 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date See Continuation Sheet
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :4/12/2004, 4/17/2008, 6/19/2008, 3/17/2009 and 6/17/2009.

DETAILED ACTION

This office action is in response to the amendment filed April 17, 2008. Claims 49, 51-54, 56-59, 61-64, 66-79, 81-84 and 86-170 are pending in the application.

Priority

1. Acknowledgment is made of applicant's claim for priority under 35 U.S.C. 119(a)-(d) based upon an application filed in Japan on February 1, 2001.

Claim Objections

2. Claims 102, 113, 129 and 139 are objected to because of the following informalities: Claim 102 recites the limitation "the permeable film" in the first two lines of the claim. This limitation, however, lacks antecedent basis in claim 102 and its parent claim 100. "A permeable film" is, however, mentioned in claim 101, and it is therefore apparent to the examiner that claim 102 should be dependent upon claim 101 instead of claim 100. Claims 113, 129 and 139 are objected to for the same reason. Appropriate correction is required.
3. Claims 153-156 are objected to because of the following informalities: Claims 153-156 attempt to further limit "a display device according to claim 154." However, since claim 154 is among these, and is dependent upon itself, it is apparent to the examiner that these claims were instead intended to depend on claim 152, and will be read as such. Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 94-96, 99, 122-124 and 126 are rejected under 35 U.S.C. 102(b) as being anticipated by Taniguchi et al. (U.S. Patent No. 5,239,228).

6. Regarding claims 94 and 122, Taniguchi discloses an electronic appliance (thin film electroluminescence device) comprising:

a display panel/display device (Fig. 10), the display panel/display device comprising:

a first substrate (11);

a light emitting element (14, luminescent layer) over the first substrate (11); and

a second substrate (51) which is translucent (transparent sealing glass plate, Col. 7, Line 8), the second substrate (51) bonded to the first substrate (11) through a layer having adhesion (52),

wherein a surface of the second substrate (51) opposing the first substrate (11) comprises a first thickness at a first region (sealing region) and a second thickness at a second region (53), the first region is adhered with the layer having adhesion (52), and the second region (53) is located inside the first region and concaved relative to the first region, and

wherein light emitted from the light emitting element is outputted to the second substrate (Col. 7, Lines 8-15).

7. Regarding claims 95 and 123, Taniguchi discloses wherein the first substrate is a glass substrate (Col. 3, Lines 33 and 34).

8. Regarding claims 96 and 124, Taniguchi discloses wherein the first and second substrate are a glass substrate (Col. 3 Lines 33 and 34 and Col. 7, Line 8).

9. Regarding claim 99, Taniguchi discloses wherein the display device is a passive matrix display device.

10. Regarding claim 126, Taniguchi discloses wherein the electronic appliance is one selected from the group consisting of a mobile telephone, a PDA, an electronic book, a video camera, a personal computer, an image reproduction apparatus, a digital camera and a mobile computer (the invention relates to a thin-film electroluminescence device capable of displaying multiple colors, Col. 1, Lines 8-9, which can be, for example, an image reproduction apparatus).

11. Claims 69, 72-74, 77, 78, 89, 92 and 93 are rejected under 35 U.S.C. 102(e) as being anticipated by Otsuki et al. (U.S. Patent No. 6,737,176).

12. Regarding claims 69, 74 and 89, Otsuki discloses a mobile telephone/digital camera (flat display device) comprising:

a display panel (Fig. 2), the display panel comprising:

a first substrate (10);

an organic light emitting element (22, organic EL stacked structure) over

the first substrate (10); and

a second substrate (24, sealing can) which is translucent (Col. 3, Lines 62-67), the second substrate (24) is bonded to the first substrate (10) through a layer having adhesion (sealing compound; Col. 8, Lines 12-15), wherein minute unevennesses (52, minute concave-convex surface) are formed on a surface of the second substrate (24), wherein a surface of the second substrate (24) opposing the first substrate (10) comprises a first region (outer sealing region), a second region (50) and a third region (52), the first region is adhered with the layer having adhesion (sealing compound), the second region (50) is located inside the first region and concaved relative to the first region, the third region (52) is located inside the second region and concaved relative to the second region (see Fig. 2), and wherein a dry agent (54, desiccant-containing layer) is provided in the third region (52).

13. Regarding claims 72, 77 and 92, Otsuki discloses wherein the first and second substrates (10 and 24) are glass substrates (Col. 3, Lines 3-7 and Lines 62-67).

14. Regarding claims 73, 78 and 93, Otsuki discloses wherein a thickness of the layer having adhesion is 10 micron or less (the adhesive used as the sealing compound can be between 1 and 100 micron, Col. 6, Lines 48-50).

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 49, 51-54, 56-59, 61-64, 66-68, 70, 71, 75, 76, 79, 81-84, 86-88, 90, 91 and 163-168 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otsuki et al. (U.S. Patent No. 6,737,176).

17. Regarding claims 49, 54 and 79, Otsuki discloses a mobile telephone/digital camera (flat display device) comprising:

a display panel (Fig. 2), the display panel comprising:

a first substrate (10);

an organic light emitting element (22, organic EL stacked structure) over the first substrate (10); and

a second substrate (24, sealing can) which is translucent (Col. 3, Lines 62-67), the second substrate (24) is bonded to the first substrate (10)

through a layer having adhesion (sealing compound; Col. 8, Lines 12-15), wherein minute unevennesses (52, minute concave-convex surface) are formed on a surface of the second substrate (24).

Otsuki, however, does not disclose wherein the heights of the minute unevennesses are set to be 0.1 micron to 3 micron. It would have been obvious to one having ordinary skill in the art at the time the invention to modify the minute unevennesses disclosed by Otsuki to include the above unevenness height limitation, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233 (1955).

18. Regarding claims 51, 56 and 81, Otsuki discloses the claimed invention, except wherein the spacing between convex portions of the minute unevennesses is set to be 0.05 micron to 1 micron. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the minute unevennesses disclosed by Otsuki to include the above spacing limitation, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233 (1955).

19. Regarding claims 52, 57 and 82, Otsuki discloses wherein the first and second substrates (10 and 24) are glass substrates (Col. 3, Lines 3-7 and Lines 62-67).

20. Regarding claims 53, 58 and 83, Otsuki discloses wherein a thickness of the layer having adhesion is 10 micron or less (the adhesive used as the sealing compound can be between 1 and 100 micron, Col. 6, Lines 48-50).

21. Regarding claims 59, 64 and 84, Otsuki discloses a mobile telephone/digital camera (flat display device) comprising:

a display panel (Fig. 2), the display panel comprising:

a first substrate (10);

an organic light emitting element (22, organic EL stacked structure) over the first substrate (10); and

a second substrate (24, sealing can) which is translucent (Col. 3, Lines 62-67), the second substrate (24) is bonded to the first substrate (10) through a layer having adhesion (sealing compound; Col. 8, Lines 12-15),

wherein minute unevennesses (52, minute concave-convex surface) are formed on a surface of the second substrate (24), and wherein a surface of the second substrate (24) opposing the first substrate (10) comprises a first thickness at a first region (outer sealing region) and a second thickness at a second region (inside the outer sealing region), the first region is adhered with the layer having adhesion (sealing compound), and the second region is located inside the first region and concave relative to the first region (see Fig. 2).

Otsuki, however, does not disclose wherein the heights of the minute unevennesses are set to be 0.1 micron to 3 micron. It would have been obvious to one having ordinary skill in the art at the time the invention to modify the minute unevennesses disclosed by Otsuki to include the above unevenness height limitation, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233 (1955).

22. Regarding claims 61, 66 and 86, Otsuki discloses the claimed invention, except wherein the spacing between convex portions of the minute unevennesses is set to be 0.05 micron to 1 micron. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the minute unevennesses disclosed by Otsuki to include the above spacing limitation, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233 (1955).

23. Regarding claims 62, 67 and 87, Otsuki discloses wherein the first and second substrates (10 and 24) are glass substrates (Col. 3, Lines 3-7 and Lines 62-67).
24. Regarding claims 63, 68 and 88, Otsuki discloses wherein a thickness of the layer having adhesion is 10 micron or less (the adhesive used as the sealing compound can be between 1 and 100 micron, Col. 6, Lines 48-50).
25. Regarding claims 70, 75 and 90, Otsuki discloses the claimed invention except wherein the heights of the minute unevennesses are set to be 0.1 micron to 3 micron. It would have been obvious to one having ordinary skill in the art at the time the invention to modify the minute unevennesses disclosed by Otsuki to include the above unevenness height limitation, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233 (1955).
26. Regarding claims 71, 76 and 91, Otsuki discloses the claimed invention, except wherein the spacing between convex portions of the minute unevennesses is set to be 0.05 micron to 1 micron. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the minute unevennesses disclosed by Otsuki to include the above spacing limitation, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233 (1955).
27. Regarding claims 163, 164 and 167, Otsuki discloses wherein the surface (52) of the second substrate (24) faces the first substrate (10).

28. Regarding claims 165, 166 and 168, Otsuki discloses wherein the surface of the second substrate (24) on which the minute unevennesses (52) are formed faces the first substrate (10).

29. Claims 97, 100-108, 110-119, 121, 125, 127-146 and 157-162 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi et al. (U.S. Patent No. 5,239,228) in view of Ebisawa et al. (U.S. Patent No. 6,284,342).

30. Regarding claims 97 and 125, Taniguchi discloses the display device wherein the second substrate (51) is bonded to the first substrate (11) through a layer having adhesion (52). Taniguchi, however, does not disclose wherein a thickness of the layer having adhesion is 10 micron or less. Attention is brought to the Ebisawa reference, which discloses a similar display device (Fig. 1) comprising a first substrate (1) and a second substrate (3) bonded with a layer having adhesion (2, adhesive). Ebisawa further discloses wherein a thickness of the layer having adhesion (2) is 10 micron or less (the adhesive may serve as the spacer between the substrate and the sealing plate, Col. 5, Lines 3 and 4, and the spacer is preferably 1 to 20 microns thick, Col. 4, Lines 58-61, when used in conjunction with the sealing plate recess). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the display device disclosed by Taniguchi to include the adhesion layer having limited thickness, as taught by Ebisawa, since minimizing the height of the adhesion layer helps eliminate the influence of moisture in the display device cavity.

31. Regarding claims 100 and 127, Taniguchi discloses an electronic appliance (thin film electroluminescence device) comprising:

a display panel/display device (Fig. 10), the display panel/display device comprising:

a first substrate (11);

a light emitting element (14, luminescent layer) over the first substrate (11); and

a second substrate (51) which is translucent (transparent sealing glass plate, Col. 7, Line 8), the second substrate (51) bonded to the first substrate (11) through a layer having adhesion (52),

wherein a surface of the second substrate (51) opposing the first substrate (11) comprises a first region (sealing region), a second region (central region over light emitting layer 14) and a third region (53), the first region is adhered with the layer having adhesion (52), the second region is located inside the first region, the third region (53) is located inside the second region (central region) and concaved relative to the second region,

wherein a dry agent (55) is provided in the third region (Col. 7, Lines 38-40), and wherein light emitted from the light emitting element is outputted to the second substrate (Col. 7, Lines 8-15).

Taniguchi, however, does not disclose wherein the second region is concaved relative to the first region. Attention is brought to the Ebisawa reference, which discloses a similar display device (Fig. 1) comprising a first substrate (1) and a second substrate (3) bonded with a layer having adhesion (2). Ebisawa further discloses wherein the surface of the second substrate (3) has a first region (sealing region), a second region (inner

recess region) and a third region (desiccant, 6, region) and wherein the second region is located inside the first region and concaved relative to the first region. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the display device disclosed by Taniguchi to include the second region (inner recess region) concaved relative to the first region (sealing region), as taught by Ebisawa, since using a sealing plate with a recess allows for a cavity above the light emitting element (4), while still effectively sealing the device with limited adhesive.

32. Regarding claims 101 and 128, Ebisawa discloses wherein a permeable film (5, sheet having gas a water vapor permeability) is adhered to a portion of the second region to thereby contain the dry agent (6, desiccant) in the third region (see Fig. 1).

33. Regarding claim 102 and 129, Ebisawa discloses wherein the permeable film (5) is provided so that a bottom surface of the permeable film is not in contact with the first substrate (1, see Fig. 1).

34. Regarding claims 103 and 130, Ebisawa discloses wherein a difference in height between a bottom portion of the second region (inner recess region) which is concaved relative to the first region (sealing region) and the first region is 160 micron to 350 micron (the sealing plate, 3, is preferably held above the substrate about 1 to 500 microns, which may be accomplished through a spacer, or providing the sealing plate with a recess, Col. 4, Lines 49-63).

35. Regarding claims 104 and 131, Ebisawa discloses wherein a difference in height between a bottom portion of the second region (inner recess region) which is concaved relative to the first region (sealing region) and the first region is 10 micron to 50 micron

(the sealing plate, 3, is preferably held above the substrate about 1 to 500 microns, which may be accomplished through a spacer, or providing the sealing plate with a recess, Col. 4, Lines 49-63).

36. Regarding claims 105 and 132, Ebisawa discloses wherein a difference in height between a bottom portion of the second region (inner recess region) which is concaved relative to the first region (sealing region) and the first region is 50 micron to 150 micron (the sealing plate, 3, is preferably held above the substrate about 1 to 500 microns, which may be accomplished through a spacer, or providing the sealing plate with a recess, Col. 4, Lines 49-63).

37. Regarding claims 106 and 133, Taniguchi discloses wherein the first substrate is a glass substrate (Col. 3, Lines 33 and 34).

38. Regarding claims 107 and 134, Taniguchi discloses wherein the first and second substrate are a glass substrate (Col. 3 Lines 33 and 34 and Col. 7, Line 8).

39. Regarding claims 108 and 135, Ebisawa discloses wherein a thickness of the layer having adhesion (2) is 10 micron or less (the adhesive may serve as the spacer between the substrate and the sealing plate, Col. 5, Lines 3 and 4, and the spacer is preferably 1 to 20 microns thick, Col. 4, Lines 58-61, when used in conjunction with the sealing plate recess).

40. Regarding claim 110, Taniguchi discloses wherein the display device is a passive matrix display device.

41. Regarding claims 111 and claim 137, Taniguchi discloses an electronic appliance (thin film electroluminescence device) comprising:

a display panel/display device (Fig. 10), the display panel/display device comprising:

a first substrate (11);

a light emitting element (14, luminescent layer) over the first substrate (11);

a layer having adhesion (52) for enclosing with a gap an area surrounding a region in which the light emitting element (14) is provided on the first substrate (11); and

a second substrate (51) which is translucent (transparent sealing glass plate, Col. 7, Line 8), the second substrate (51) bonded to the first substrate (11) through the layer having adhesion (52),

wherein a surface of the second substrate (51) opposing the first substrate (11) comprises a first region (sealing region), a second region (central region over light emitting layer 14) and a third region (53), the first region is adhered with the layer having adhesion (52), the second region (central region) is surrounded by the first region (sealing region), the third region (53) is located between the layer having adhesion (52) and an upper portion of the region in which the light emitting element is provided and concaved relative to the second region, wherein a dry agent (55) is provided in the third region (Col. 7, Lines 38-40), and wherein light emitted from the light emitting element is outputted to the second substrate (Col. 7, Lines 8-15).

Taniguchi, however, does not disclose wherein the second region is concaved relative to the first region. Attention is brought to the Ebisawa reference, which discloses a similar display device (Fig. 1) comprising a first substrate (1) and a second substrate (3) bonded with a layer having adhesion (2). Ebisawa further discloses wherein the surface of the second substrate (3) has a first region (sealing region), a second region (inner recess region) and a third region (desiccant, 6, region) and wherein the second region is surrounded by the first region and concaved relative to the first region. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the display device disclosed by Taniguchi to include the second region (inner recess region) concaved relative to the first region (sealing region), as taught by Ebisawa, since using a sealing plate with a recess allows for a cavity above the light emitting element (4), while still effectively sealing the device with limited adhesive.

42. Regarding claims 112 and 128, Ebisawa discloses wherein a permeable film (5, sheet having gas a water vapor permeability) is provided between the layer having adhesion (2) and the upper portion of the region in which the light emitting element is provided, and the permeable film (5) is adhered to a part of the second region to thereby contain the agent (6, desiccant) in the third region (see Fig. 1).

43. Regarding claims 113 and 139, Ebisawa discloses wherein the permeable film (5) is provided so that a bottom surface of the permeable film is not in contact with the first substrate (1, see Fig. 1).

44. Regarding claims 114 and 140, Ebisawa discloses wherein a difference in height between a bottom portion of the second region (inner recess region) which is concaved

relative to the first region (sealing region) and the first region is 160 micron to 350 micron (the sealing plate, 3, is preferably held above the substrate about 1 to 500 microns, which may be accomplished through a spacer, or providing the sealing plate with a recess, Col. 4, Lines 49-63).

45. Regarding claims 115 and 141, Ebisawa discloses wherein a difference in height between a bottom portion of the second region (inner recess region) which is concaved relative to the first region (sealing region) and the first region is 10 micron to 50 micron (the sealing plate, 3, is preferably held above the substrate about 1 to 500 microns, which may be accomplished through a spacer, or providing the sealing plate with a recess, Col. 4, Lines 49-63).

46. Regarding claims 116 and 142, Ebisawa discloses wherein a difference in height between a bottom portion of the second region (inner recess region) which is concaved relative to the first region (sealing region) and the first region is 50 micron to 150 micron (the sealing plate, 3, is preferably held above the substrate about 1 to 500 microns, which may be accomplished through a spacer, or providing the sealing plate with a recess, Col. 4, Lines 49-63).

47. Regarding claims 117 and 143, Taniguchi discloses wherein the first substrate is a glass substrate (Col. 3, Lines 33 and 34).

48. Regarding claims 118 and 144, Taniguchi discloses wherein the first and second substrate are a glass substrate (Col. 3 Lines 33 and 34 and Col. 7, Line 8).

49. Regarding claims 119 and 145, Ebisawa discloses wherein a thickness of the layer having adhesion (2) is 10 micron or less (the adhesive may serve as the spacer

between the substrate and the sealing plate, Col. 5, Lines 3 and 4, and the spacer is preferably 1 to 20 microns thick, Col. 4, Lines 58-61, when used in conjunction with the sealing plate recess).

50. Regarding claim 121, Taniguchi discloses wherein the display device is a passive matrix display device.

51. Regarding claims 136 and 146, Taniguchi discloses wherein the electronic appliance is one selected from the group consisting of a mobile telephone, a PDA, an electronic book, a video camera, a personal computer, an image reproduction apparatus, a digital camera and a mobile computer (the invention relates to a thin-film electroluminescence device capable of displaying multiple colors, Col. 1, Lines 8-9, which can be, for example, an image reproduction apparatus).

52. Regarding claim 157 and 160, Taniguchi discloses wherein a dry agent (55) is present in a region between the first substrate (11) and the second substrate (51). Taniguchi, however, does not disclose wherein the dry agent is covered with a porous film to seal the region between the first substrate and the second substrate. Attention is brought to the Ebisawa reference, which discloses a similar display device (Fig. 1) comprising a first substrate (1) and a second substrate (3) bonded with a layer having adhesion (2). Ebisawa further discloses a dry agent (6, desiccant) covered with a porous film (5, having gas and water vapor permeability) to form a sealed region between the first substrate (1) and the second substrate (3). It would have been obvious to one having ordinary skill in the art at the time the invention was made, to modify the display device disclosed by Taniguchi, to include wherein the dry agent is

sealed with a porous film between the first and second substrates, since providing a desiccant is advantageous for controlling moisture, yet it needs to remain out of contact with the light emitting element to avoid deleterious effects.

53. Regarding claims 158, 159, 161 and 162, Ebisawa discloses wherein the dry agent (6) is covered with a porous film (5).

54. Claim 98 is rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi et al. (U.S. Patent No. 5,239,228) in view of Silvernail et al. (U.S. Patent No. 6,537,688).

55. Regarding claim 98, Taniguchi discloses the display device wherein the light emitting element (14) is sandwiched between a first substrate (11) and a second substrate (51) which are bonded through a layer having adhesion (52). Taniguchi, however, does not disclose wherein the display device is an active matrix display device. Attention is brought to the Silvernail reference, which discloses similar structures (Fig. 1) for protecting light emitting elements (optoelectronic devices) from the surrounding environment (Col. 1, Lines 7-9). Silvernail further discloses wherein the light emitting element (organic optoelectronic device) can comprise an organic thin film transistor (Col. 1, Lines 59-63, i.e. an active matrix display). It would have been obvious to one having ordinary skill in the art at the time the invention was made, to modify the display device disclosed by Taniguchi to include wherein the display device is an active matrix display device, as taught by Silvernail, since active displays devices are likewise susceptible to attack from exterior environmental species (Silvernail, Col. 1, Lines 46-50).

56. Claims 109 and 120 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi et al. (U.S. Patent No. 5,239,228) and Ebisawa et al. (U.S. Patent No. 6,284,342) as in claim 100 above, and in further view of Silvermail et al. (U.S. Patent No. 6,537,688).

57. Regarding claims 109 and 120, Taniguchi and Ebisawa disclose the display device wherein the light emitting element (Taniguchi, 14) is sandwiched between a first substrate (11) and a second substrate (51) which are bonded through a layer having adhesion (52). Taniguchi and Ebisawa, however, do not disclose wherein the display device is an active matrix display device. Attention is brought to the Silvermail reference, which discloses similar structures (Fig. 1) for protecting light emitting elements (optoelectronic devices) from the surrounding environment (Col. 1, Lines 7-9). Silvermail further discloses wherein the light emitting element (organic optoelectronic device) can comprise an organic thin film transistor (Col. 1, Lines 59-63, i.e. an active matrix display). It would have been obvious to one having ordinary skill in the art at the time the invention was made, to modify the display device disclosed by Taniguchi and Ebisawa to include wherein the display device is an active matrix display device, as taught by Silvermail, since active displays devices are likewise susceptible to attack from exterior environmental species (Silvermail, Col. 1, Lines 46-50).

58. Claims 147-149, 151-154, 156, 169 and 170 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi et al. (U.S. Patent No. 5,239,228) in view of Otsuki et al. (U.S. Patent No. 6,737,176).

59. Regarding claim 147, Taniguchi discloses a display device (Fig. 10) comprising:

a first substrate (11);
a light emitting element (14, luminescent layer) over the first substrate (11); and
a second substrate (51) which is translucent (transparent sealing glass plate, Col. 7, Line 8), the second substrate (51) bonded to the first substrate (11) through a layer having adhesion (52),

wherein light emitted from the light emitting element is outputted to the second substrate (Col. 7, Lines 8-15).

Taniguchi, however, does not disclose wherein minute unevennesses are formed on a surface of the second substrate. Attention is brought to the Otsuki reference (Fig. 2), which discloses a similar display device structure comprising a light emitting element (22, organic EL stacked structure) sandwiched between a first substrate (10) and a second substrate (24) and wherein minute unevennesses (52, minute concave-convex surface) are formed on a surface of the second substrate. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the display device disclosed by Taniguchi to include minute unevennesses formed on the surface of the second substrate, as taught by Otsuki, since the concave-convex surface has an anchoring effect for firmly fixing a desiccant-containing layer (Otsuki, Col 5, Lines 43-45).

60. Regarding claim 148, Otsuki discloses the minute unevennesses formed on the surface of the second substrate. Otsuki, however, does not disclose wherein the height of the minute unevennesses is set to be 0.1 micron to 3 micron. It would have been

obvious to one having ordinary skill in the art at the time the invention to modify the minute unevennesses disclosed by Otsuki to include the above unevenness height limitation, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233 (1955).

61. Regarding claim 149, Otsuki discloses the minute unevennesses formed on the surface of the second substrate. Otsuki, however, does not disclose wherein the spacing between convex portions of the minute unevennesses is set to be 0.05 micron to 1 micron. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the minute unevennesses disclosed by Otsuki to include the above spacing limitation, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233 (1955).

62. Regarding claim 151, Taniguchi discloses wherein the display device is a passive display device.

63. Regarding claim 152, Taniguchi discloses a display device (Fig. 10) comprising:

- a first substrate (11);
- a light emitting element (14, luminescent layer) over the first substrate (11); and
- a second substrate (51) which is translucent (transparent sealing glass plate, Col. 7, Line 8), the second substrate (51) bonded to the first substrate (11) through a layer having adhesion (52),

wherein a surface of the second substrate (51) opposing the first substrate (11) comprises a first thickness at a first region (sealing region) and a second thickness at a second region (53), the first region is adhered with the layer having adhesion (52), and the second region (53) is located inside the first region and concaved relative to the first region, and
wherein light emitted from the light emitting element is outputted to the second substrate (Col. 7, Lines 8-15).

Taniguchi, however, does not disclose wherein minute unevennesses are formed on a surface of the second substrate. Attention is brought to the Otsuki reference (Fig. 2), which discloses a similar display device structure comprising a light emitting element (22, organic EL stacked structure) sandwiched between a first substrate (10) and a second substrate (24) and wherein minute unevennesses (52, minute concave-convex surface) are formed on a surface of the second substrate. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the display device disclosed by Taniguchi to include minute unevennesses formed on the surface of the second substrate, as taught by Otsuki, since the concave-convex surface has an anchoring effect for firmly fixing a desiccant-containing layer (Otsuki, Col 5, Lines 43-45).

64. Regarding claim 153, Otsuki discloses the minute unevennesses formed on the surface of the second substrate. Otsuki, however, does not disclose wherein the height of the minute unevennesses is set to be 0.1 micron to 3 micron. It would have been obvious to one having ordinary skill in the art at the time the invention to modify the

minute unevennesses disclosed by Otsuki to include the above unevenness height limitation, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233 (1955).

65. Regarding claim 154, Otsuki discloses the minute unevennesses formed on the surface of the second substrate. Otsuki, however, does not disclose wherein the spacing between convex portions of the minute unevennesses is set to be 0.05 micron to 1 micron. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the minute unevennesses disclosed by Otsuki to include the above spacing limitation, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233 (1955).

66. Regarding claim 156, Taniguchi discloses wherein the display device is a passive display device.

67. Regarding claim 169, Otsuki discloses wherein the surface (52) of the second substrate (24) faces the first substrate (10).

68. Regarding claim 170, Otsuki discloses wherein the surface of the second substrate (24) on which the minute unevennesses (52) are formed faces the first substrate (10).

69. Claims 150 and 155 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi et al. (U.S. Patent No. 5,239,228) and Otsuki et al. (U.S. Patent No.

6,737,176) as in claims 147 and 152 above, and in further view of Silvernail et al. (U.S. Patent No. 6,537,688).

70. Regarding claims 150 and 155, Taniguchi and Otsuki disclose the display device wherein the light emitting element (Taniguchi, 14) is sandwiched between a first substrate (11) and a second substrate (51) which are bonded through a layer having adhesion (52). Taniguchi and Otsuki, however, do not disclose wherein the display device is an active matrix display device. Attention is brought to the Silvernail reference, which discloses similar structures (Fig. 1) for protecting light emitting elements (optoelectronic devices) from the surrounding environment (Col. 1, Lines 7-9). Silvernail further discloses wherein the light emitting element (organic optoelectronic device) can comprise an organic thin film transistor (Col. 1, Lines 59-63, i.e. an active matrix display). It would have been obvious to one having ordinary skill in the art at the time the invention was made, to modify the display device disclosed by Taniguchi and Otsuki to include wherein the display device is an active matrix display device, as taught by Silvernail, since active displays devices are likewise susceptible to attack from exterior environmental species (Silvernail, Col. 1, Lines 46-50).

Conclusion

71. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMIE NIESZ whose telephone number is (571)270-7874. The examiner can normally be reached on Monday through Thursday 8-6:30 EST.

72. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra Smith can be reached on 571-272-2429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

73. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Zandra V. Smith/
Supervisory Patent Examiner, Art Unit 2822

JAMIE NIESZ
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